be undertaken, as Doctor Dolley points out, before the abscess becomes chronic.

The treatment for an acute and a chronic abscess is therefore very different. In the acute abscess we attempt to establish drainage by posture, by bronchoscopy and by artificial pneumothorax, and we choose the method or methods depending upon the case and its progress.

Of these methods probably the bronchoscope is the most important in removing plugs or granulations or opening up a bronchus with cocain and adrenalin, allowing the discharge to be liberated. At times also we use in addition after such bronchoscopies carbon dioxid and oxygen to increase ventilation of the lung, which in turn tends to keep the cavity empty. We try to be extremely careful not to allow time to slip by until the patient shall have become so seriously weakened by continued infection as to make recovery difficult, even by operative interference.

The course of many of these abscesses is very erratic and each case requires individual study. We feel that one can be very easily stampeded into a too early operation, and if this occurs death may ensue from the dislodgment of emboli which might otherwise have cleared up under some carefully provided system of drainage. Those patients that have hemorrhage along with expectoration are the ones that are the most trying and in these we attempt an early pneumothorax. Bronchoscopy here becomes more dangerous and operation also carries with it a higher mortality.

In conclusion we wish to repeat that our operations have diminished more than half and we believe we are clearing up our cases in a much quicker time by correlation of the different methods of producing drainage of the abscess.

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F. M. Pottenger, M. D. (Monrovia).—Doctor Dolley's paper on the diagnosis and treatment of lung abscess presents to us an excellent discussion of one of the most difficult problems in chest disease. The old method of draining an abscess as soon as it is diagnosed is wrong. During the acute state of an abscess it should always be given an opportunity to heal, and operative procedures should not be undertaken until the abscess is walled off. When the acute pathologic changes have come to a standstill, and the abscess is walled off, then operative procedures should be undertaken, if deemed necessary.

In some of these cases pneumothorax will compress the tissue and bring about a satisfactory healing. In other cases it seems to be insufficient and wholly fails to control the pathology.

If after a few weeks' medical observation the abscess does not show a tendency to heal, the surgeon should always be called into consultation.

Aside from pneumothorax, in the treatment of early abscess, drainage may be assisted by posture and also by bronchoscopy. Where the abscess drains slowly, bronchoscopy has often given marked relief. Unless free drainage is established and maintained there is no possible chance for healing.

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Doctor Dolley (Closing).—I feel that little need be added except by way of emphasis on the points so well brought out by the discussers. I shall close with but a word of further caution in regard to the employment of artificial pneumothorax in the presence of acute or even chronic lung abscess if a recent flare-up involving the surrounding lung tissue is evident. I am firmly convinced that even if a lung abscess be apparently deep-seated there is grave danger of acute pleuritis with overwhelming toxemia developing (under artificial pneumothorax treatment) either through needle injury to lung in an infected area or by actual extension of the inflammatory process to the visceral pleura with subsequent rupture into pneumothorax cavity and that only in the chronic or late subacute lung abscesses, when all signs of surrounding pulmonitis have disappeared, is this procedure safely indicated for trial.

CARCINOMA OF THE CERVIX—ITS SURGICAL TREATMENT*

By Hans von Geldern, M. D.
San Francisco

Discussion *by William H. Gilbert, M. D., Los Angeles; Emil G. Beck, M. D., Chicago; C. G. Toland, M. D., Los Angeles.*

PREVIOUS to the comparatively recent introduction of radiologic therapy, surgery had been considered the method of choice in the cure of uterine cancer. As treatment with radioactive rays was developed and perfected, however, many of the strong advocates of radical surgery were gradually won over to radiologic therapy on the basis of the excellent results reported and the almost complete absence of primary mortality. Gynecologists are still divided as to the preferable procedure, especially in the early cases of carcinoma of the cervix.

EARLY SURGICAL PROCEDURES

The first systematic attempts at the surgical cure of cervical cancer consisted of high amputations of the cervix and vaginal hysterectomies. Freund in 1878 introduced the removal of uterine cancers by the abdominal route and had quite a following, but this operation in the hands of others was decidedly unsuccessful and surgeons again turned their attention to the original vaginal technique, obtaining far better primary results. During this same period Byrne introduced cautery amputation of the cervix, reporting a number of cures. Operators, however, soon realized that their failures were the result of incomplete excision of carcinomatous tissue, and a number of surgeons, notably Ries, Clark and Werder, again became interested in the abdominal approach, developing a radical procedure which was perfected and popularized by Wertheim. Werder later abandoned the operation he originally proposed for a combined vaginal and abdominal cautery extirpation.

RADICAL OPERATIONS

The original Wertheim operation consisted of the removal of the entire uterus, tubes, ovaries, parametria, paracervical tissues and part of the vagina, along with an extensive dissection of the regional glands. At that time the only hope for cure was dependent upon dissecting wide of the carcinomatous extensions and the technique carried with it a high mortality. In the earlier years of radical surgery many hopelessly advanced cases were operated upon, but in subsequent years the pendulum gradually swung back to less radicalism, with more careful selection of patients for operation and improvements in technique.

P. Werner of the II Frauenklinik, Vienna, recently described his present technique. He warns against immediate preoperative manipulation or examinations, and advises spinal anesthesia. Werner emphasizes the importance of after treatment, especially the care of the bladder, and carries out postoperative roentgen radiation on all patients as soon as possible after the operation.

* Read before the Obstetrics and Gynecology Section of the California Medical Association at the fifty-eighth annual session, May 6-9, 1929.

Coincident with the development of the radical abdominal technique, Schuchardt announced an extended vaginal operation which was improved upon by Schauta. This improved operation embodies the same principles of block dissection of the pelvic organs and their ligamentous connections, but fails to eradicate involved glands distant from the parametria. Contamination of the operative field, a great source of danger in the abdominal operation, is avoided by sewing together a vaginal cuff about the infected cervix. The operation is facilitated by a paravaginal incision, which shortens the vagina and makes the parametria accessible.

Statistics indicate that the incidence of injuries to the adjacent organs and the percentage of five-year cures are about equal for either type of operation. Most surgeons prefer the Wertheim technique for its accessibility, but in general agree that the radical vaginal operation is especially adapted to patients who are suffering from constitutional diseases, to the obese and the aged. The primary mortality following the Schauta operation is only about one-third that attending the Wertheim. The former technique, in the past, has been condemned by many because of its inability to reach metastatic glands, but at present few surgeons still advise the routine removal of lymph glands, as the experience of Schauta, Weibel, and others has been that few patients with lymph gland metastases have been cured by surgery. Gellhorn points out that each method has its special virtues and that gynecologists should have at their command the technique of both operations.

Whereas many surgeons, especially in America, have stopped operating altogether for cervical cancer, others still adhere to the radical abdominal technique either alone, or in combination with radiation, and a few advocate simple panhysterectomy after complete preoperative radiation. Stoeckel and Toth routinely use pre- and postoperative radiation in conjunction with the Schauta operation. Keene, Gardner, Kuhn, and others favor cautery amputation followed by radium, especially in early cervical cancer.

SELECTION OF PATIENTS FOR OPERATION

Before radium entered the therapeutic field the aim of surgeons was to increase the number of operations for cancer of the cervix to a maximum. At that time 50 to 90 per cent of patients were operated upon. At present operability implies that the growth is of such limited extent that a permanent cure may be reasonably expected. In general less than 20 per cent of patients with cancer of the cervix are now considered operable. Most gynecologists now agree that the criteria for classifying patients as operable are normal mobility of the uterus, flexible and noninvaded fornices, lack of parametrial infiltration, patency of the cervix, afebrility and absence of pathogenic organisms in the cervical secretions.

An increase in the number of surgical cures will depend on earlier diagnoses, all border-line cases being reserved for radium. Some investigators contend that surgery should be reserved for patients upon whom a positive diagnosis can be made only through biopsy examination. However, Bonney, whose operability rate is about 55 per cent, has obtained remarkable results, curing 33 per cent of patients with carcinomatous lymph glands. He claims that the bars to operation are deep and extensive infiltration of the bladder or rectum and obstruction of the ureters, and has overcome involvement of the whole vagina by means of his supra-Wertheim operation. Notwithstanding the contention that radium cures as many operable cases as surgery, it is recognized that there is a group of adenomatous cancers, comprising about 5 per cent, which fail to respond to radium therapy and are, therefore, best treated by surgery if within the limits of operability.

PROGNOSIS

The grouping of cervical carcinomas proposed by Schmitz segregates these tumors into four groups, according to the clinical extent of growth. It is agreed that tumors belonging to Group 1 are clearly operable and in general offer a good prognosis, providing there are no surgical contraindications and that a skillful radical operation is performed. Patients belonging to Group 2 offer a questionable prognosis and should no longer be operated upon, while those classified in Groups 3 and 4 are definitely considered inoperable. Experience has made it apparent that the clinical extent of growth is of greatest prognostic indication as far as surgery is concerned.

Martzloff recently made a study of the histopathologic material obtained from a group of patients upon whom radical surgery had been performed, in order to determine the criteria essential to establish the prognosis following operative treatment. His classification of epidermoid cancers, based upon the predominating type of cell, and grouping according to the degree of cellular differentiation, was used; a classification not unlike in principle to those of Broders and Schottlaender and Kermauner. Each type, as well as the adenocarcinomas, was studied separately with respect to the duration of symptoms, clinical extent of growth and the ultimate results. Symptoms of over eight months' duration put the cases with spinal and transitional cell types beyond the hope of operative cure, while those exhibiting the more malignant spindle cell type were found hopelessly advanced before this time. Metastases and paracervical extension indicated a poor prognosis in all types. Of the operable cases the adenocarcinomas and spinal cell growths showed the greatest incidence of permanent cures, and the spindle cell types the least.

Most investigators, however, place more emphasis on the clinical stage than upon histologic grouping, when surgery is used, while Wintz, Plaut, and others claim that there is no reliable basis for histologic prognosis in cervical cancer. Efforts have been made to establish a prognosis from a study of biopsy specimens, but the recent investigations of Martzloff have shown that about

one-third of the material studied failed to indicate correctly the predominating variety of cancer cell in the parent tumor.

PRIMARY MORTALITY AND COMPLICATIONS

Generally speaking, the primary mortality attending radical surgery has shown a marked decline, due to a reduction in operability and improvement of technique, but figures from different clinics show wide variation. This may be accounted for on the basis of the types of cases selected and the methods of operative management. Twenty years ago an operative mortality of 20 to 25 per cent was considered the average for experienced surgeons. Statistics collected by Jacobson in 1911, by Janeway in 1919, and Heyman in 1927 show an average operative mortality of 19.5, 18, and 17.2 per cent respectively, and Lynch's figures, based on over three thousand Wertheim operations performed by European and American surgeons, showed 16.5 per cent. Thirty per cent of Wertheim's first one hundred cases died, the mortality being later reduced to 10 per cent. Werner reports that the present operative mortality for cervical cancer in Wertheim's clinic is between 5 and 6 per cent. The percentage of operative deaths in Franz' clinic has dropped from 23 to 14 per cent and at Johns Hopkins from 14 to 7 per cent. Recently Zweifel, Weibel, Graves, and Jeff Miller report from 4 to 7 per cent. Operators using the Schauta technique now have a primary mortality of between 3 and 4 per cent. German surgeons have reduced the death rate by the use of spinal anesthesia. A reduction of surgical mortality is most essential to operative treatment in its competition with radiologic therapy.

Improvements of technique and more limited selection of patients for operation have also brought about a reduction in postoperative complications. At Johns Hopkins the following complications occurred in order of frequency: Infected wounds, vesicovaginal and ureterovaginal fistulae, thrombophlebitis, peritonitis, nephropathies, pulmonary complications, rectovaginal fistulae, and intestinal obstruction. Shock, peritonitis, pulmonary and urinary tract complications were responsible for the deaths.

END RESULTS

In order to evaluate with some degree of accuracy the results obtained in the treatment of cancer of the uterus, Winter proposed as a standard of curability, freedom from recurrence for a period of five years. From 2 to 6 per cent of cervical cancers recur after five years, but this is offset by the difficulty of tracing over a longer period. Before the advent of radium, when surgery was the only means of cure, a calculation of absolute cures seemed the fairest means of determining results, as operators differed so widely in their methods.

Heyman's statistics, collected from twenty operative clinics, showed an average absolute curability of 19.1 per cent and an average of 16.3 per cent for seventeen clinics using radiologic treatment. These figures can hardly be compared as the radium statistics represent different material and more recent work.

With radiologic therapy now a competitor of surgery, the percentage of relative cures has become a better index as to the results of either type of therapy in similar cases. Some 3659 extended operations, collected from the literature by Heyman, showed an average of 35.6 per cent recovery. No doubt a considerable proportion of these cases could not be considered operable in the sense with which we use the term today. Five-year end results, collected from twelve radiologic clinics, showed an average of 34.9 per cent in operable and border-line cases. Wille, Weibel, Warnekros, Faure and Bonney, enthusiastic advocates of radical abdominal surgery, in their more recent reports show ultimate cures in early cases ranging as high as 75 per cent, quite comparable to the results obtained in similar cases treated radiologically in the clinics of Heyman, Ward, Bailey and Healy, and Doderlein. It must be remembered, however, that these surgeons are unusually skillful and have developed the technique over a period of years before such results were obtained. A number of surgeons have obtained better results after using pre- or postoperative radiation in conjunction with their radical hysterectomies. The use of radium in combination with cauterization or electrocoagulation is in its experimental stage. Five of six early cases treated by cauterization and radium, reported by John G. Clark, have recovered. Extensive cauterizations and starvation ligations as palliative procedures in advanced carcinomas have been largely superseded by radiologic therapy.

STANFORD CLINIC OBSERVATIONS

Of eighty-seven patients with carcinoma of the cervix treated in the Stanford women's clinic from 1912 to 1924, twenty-six were radically operated upon and of these 38.5 per cent remained free of recurrence five or more years. The operative mortality was 11.5 per ment with no operative deaths among fifteen patients treated between 1918 and 1924. The absolute curability was 13.8 per cent. Most of the patients were treated with radium, preoperatively, four to five weeks prior to operation, postoperative radiation being reserved for cases in which there was incomplete extirpation or in which recurrences developed. Palliative procedures used in the treatment of inoperable cancers consisted of the use of acetone, Percy cautery, Pacquelin cautery, and radiation. There was no apparent relation between the duration of symptoms and the clinical extent of the disease. Since 1925, with the hope of improving results, radium has been used in this clinic almost to the exclusion of operative interference, following the cross-fire technique used at Radiumhemmet. Thus far too few patients have been followed over a sufficiently long period to draw conclusions.

CARCINOMA OF THE BODY OF THE UTERUS

Many of those who have completely abandoned operative procedures for cancer of the cervix admit that surgery is indicated in carcinoma of the fundus. Controversy still exists as to the

extent of removal. Although Weibel and Peterson obtained their best results by using the radical technique, the present method of choice is total hysterectomy with bilateral adnexectomy. It is an accepted fact that this method offers from 65 to 80 per cent permanent cures. Some European operators favor vaginal hysterectomy for body carcinoma. Eymer, Polak, Crile, Ward, Healy, and others advocate total hysterectomy and salpingo-oöphorectomy along with preoperative and also postoperative radiation if necessary. The uterus may be removed either a few days or from four to six weeks after thorough intra-uterine radiation.

It is all important that an early diagnosis be made. Diagnostic curettage must be followed by intra-uterine radium unless laparotomy is to be performed at once. The prognosis in general is better than in cancer of the cervix, due to a relatively late penetration and involvement of the surrounding structures and a lower degree of malignancy. Mahle studied these tumors histologically and found that cures were much more frequently obtained in the less malignant types. Norris and Vogt, in a study of 115 cases of body carcinomata, report a primary mortality of 7.3 per cent, with 50 per cent of operative cases and 35 per cent of those treated by radium surviving a five-year period. Van S. Smith and Grinnell report five-year cures in 45 per cent of a similar group treated by surgery. They express the opinion that radium is inferior to hysterectomy in the treatment of fundus cancers. The results, with operative treatment on 323 operable body carcinomas collected from eight clinics, showed an average of 58.8 per cent recovery, whereas 118 operable cases treated with radium showed 47.5 per cent. Sixty per cent of the operable patients treated at Radiumhemmet were cured, and on the basis of these figures Heyman concludes that radium can well compete with surgery in the treatment of body carcinomas.

CONCLUSIONS

1. There is a general tendency toward the limitation of radical surgery to carefully selected early cases of carcinoma of the cervix.

2. The clinical extent of growth is the greatest single prognostic indication following extended operations.

3. Experienced surgeons are now operating for cancer of the cervix, with a primary mortality of less than 8 per cent.

4. The best surgical results are obtained when radiation is used in conjunction with extended operations for cancer of the cervix.

5. Panhysterectomy and double salpingo-oöphorectomy in conjunction with radiation is the method of choice in the treatment of carcinoma of the body of the uterus.

6. Until further comparative statistics based on the treatment of early cervical carcinomas are available, it is well, before we abandon surgery altogether, that we keep an open mind on this phase of the subject.

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DISCUSSION

WILLIAM H. GILBERT, M. D. (746 Francisco Street, Los Angeles).—Cancer of the cervix and cancer of the breast still remain debatable questions. Rapid metastasis in both these locations means a high percentage of recurrences and deaths. Unquestionably, cancer is a curable disease when discovered in its early stages. Surgery, the cautery, or radium will cure at that time. It seems to me that the best we can look for in the treatment of advanced cancer of the cervix is a 25 per cent cure. This is the figure supplied by Haydon of Stockholm, Sweden, and probably represents the highest percentage of cures of all types of cases and applies to the use of radium and x-ray radiation exclusively. Surgery has never been able to equal this record in the type of cases alluded to. In the surgical treatment of early cancer of the cervix the figures are in favor of operative procedure. After all has been said and done, we come back to the question of the personal equation. Much of the good results obtained through surgery depends upon the judgment and skill of the operating surgeon. This is equally true of the radiologist. He must have had a wide range of observation and experience in the use of radium and x-ray. I have used all the accepted methods. Percy's cautery, in early cases in which I resort to surgery, is my method of choice. I believe the radical hysterectomy made with the cautery knife is the best technique to follow. In more advanced cases I have cooked the cancer with the cautery and have seen the patients die of septicemia afterward. I have also seen the same result after large doses of radium. I believe the radium technique, as followed by Ward of the New York Woman's Hospital, has given me the best results. How to cure cancer is a tremendous question of great interest to the human race, and a gigantic problem for the medical profession to solve. Much water has run over the dam and much will follow before the question is answered to the satisfaction of both the public and the profession. At the present time I am inclined to believe that metastatic cancer patients will live longer and be more comfortable if let alone. When cancer becomes a general infection, any local treatment we may use will be of little avail.

Education of both the laity and profession as to the necessity of early diagnosis and treatment will do much toward decreasing the mortality rate of cancer.

To summarize, I would say that at this time an early diagnosis, a splendidly qualified surgeon, and an expert radiologist are absolutely necessary to the cure of cancer.

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EMIL G. BECK, M. D. (Chicago, Illinois).—Doctor Von Geldern has given us an unbiased opinion on the relative value of surgery and radiotherapy in the treatment of carcinoma of the cervix, and has clearly defined the indications for each, or of a combination of the same. Whenever a discussion on carcinoma of the cervix takes place, our main object is to find out whether surgery or radiotherapy offers the best chance for permanent cure or the longest period of prolongation of life. Statistics from American clinics and from abroad indicate that the status is still in favor of surgery combined with preoperative and postoperative radiation.

Radiation without surgery in cervical carcinoma has, however, gradually gained in popularity, as the surgeons become convinced of its merits. It has one thing in its favor, namely, practically no mortality, and less expense to the patient.

The comparative value of surgery or radio therapy cannot be estimated by merely counting the deaths or by the five-year end results. We must take into account that the worst cases fall into the hands of the radiologist. Many cases in which merely an exploration is done and regarded as inoperable apply to the radiologist and thus the fatal end results is charged to radiology and not to surgery.

It is, however, most essential that the surgeon and the radiologist coöperate in order to give the patient

the best chance for recovery. If I were asked to mention the most essential requirements in cancer therapy I would unhesitatingly say, coöperation between surgeon and radiologist.

In cancer of the cervix we should really expect more favorable results than in other parts of the body. It is in the earlier stages accessible to direct radiation similar to the superficial epitheliomata of the skin or lip. It is only when the body of the uterus and the intrapelvic glands are affected that the case becomes uncontrollable. We must bear in mind that unless we can destroy the last cancer cell we may expect a recurrence. In other words, every retained cancer cell after an operation is a potential recurrent cancer. Since the individual cancer cell is not palpable or visible during an operation, the surgeon is not always able to tell whether any cells have been retained in the wound and thus it is essential that postoperative radiotherapy should be carried out most efficiently. Fortunately this can be carried out with greater ease in carcinoma of the cervix because the tube of radium may be placed in direct contact and into the cavity of the uterus. The additional x-ray treatment has also been efficiently worked out by experts.

One word about the correct and early diagnosis. Not every ulceration of the cervix in a woman who has borne children and who is suffering from an endocervicitis, is a carcinoma. In suspicious looking ulcers we resort to biopsy. In the smooth granulated ulcer I have usually resorted to a test by treating them with 20 per cent silver nitrate and bismuth application. The nonmalignant ulcer will usually yield to this treatment, but if it does not, then it becomes a suspicious case, and the biopsy clears the diagnosis.

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C. G. TOLAND, M. D. (1930 Wilshire Boulevard, Los Angeles).—In a consideration of the treatment of carcinoma of the cervix it is impossible to state definitely that any one procedure is the best. Some of our leading gynecologists favor the use of radium alone, others frequently employ a radical operation, many advocate irradiation and operation combined, and a few use the cautery. Where there is such a diversity of opinion it can be assumed that no treatment is entirely satisfactory.

If the surgeon could be reasonably certain in the early cancers of the cervix, that the malignant cells had not extended into the parametrium; and that no general or local contraindications existed to an operation; then a radical operation would be the method of choice.

Unfortunately the number of patients with an early cervical carcinoma who present themselves for examination is extremely small. The onset of the disease is insidious and in the early stages the symptoms are not sufficiently striking to force the patient to submit to a rather indelicate examination.

Where the malignancy has extended beyond the cervix, an operation has very little to offer the patient. There is considerable danger of disseminating the cancer cells as a result of the operative trauma, and even in skilled hands there is some immediate mortality.

The combination of surgery and irradiation undoubtedly has produced excellent results, but there is some question as to whether the same results could not have been obtained with radiation alone.

In our own work the results from surgery have seemed so uniformly unsatisfactory that we have abandoned operative procedure entirely. For the past eight years all cases, whether early or late, have been treated by the radiologist exclusively. The combination of x-ray and radium has been employed, and even in the advanced cases rather surprisingly good results have been obtained, with the additional feature of practically no mortality.

In this field, as in operative technique, a high degree of skill and experience is necessary. Troublesome abscess formation, a prolonged proctitis, or other undesirable complications may follow too enthusiastic irradiation.

When the carcinoma has confined itself to the fundus of the uterus we have not found radium so effective. A radical operation has given the patient the best chance for a cure. The abdominal total hysterectomy has been the safest and most satisfactory.

THE LURE OF MEDICAL HISTORY

A NOTE ON THE MEDICAL BOOKS OF FAMOUS PRINTERS*

PART I

By CHAUNCEY D. LEAKE, Ph. D.
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GOOD printing has always exercised its own peculiar fascination on those who love the beautiful, and with recent historical and artistic interest in the subject, as evidenced by the enthusiasm for finely printed private press work, it has become dignified to a fine art. It is one of the delightful sidelights of the historical study of medicine to follow along the developments in the art of printing. Almost all phases of the history of printing as a fine art may be traced in medical books.

THE ORIGIN OF PRINTING

In ancient Greek and Roman times, and all through the Middle Ages, books were painfully and slowly copied out by hand by professional scribes. Naturally this was a poor process, and very expensive. Only the very rich could afford books made by such a method and, of course, there was great restriction in the distribution of such as were copied. The manuscripts were usually richly bound and carefully preserved, for they represented wealth in view of their difficulty of production. In many libraries of the period these manuscript books were tightly chained to reading stalls and indeed this same practice continued in some cases after the publication of printed books.

It has always been supposed that the Chinese invented the device of movable type by which repeated impressions of the same figure might be made. It can only be proved that they used seals for stamping in quite the same way that the Romans and many other peoples used similar stamps. It remained for western ingenuity actually to invent printing.

The first printing effort to be successful was that initiated by Johan Gutenberg of Mainz in Germany. Here, after great labor in cutting the wood blocks to imitate as closely as possible the hand-made letters of the manuscripts, he published with Johan Fust, the first printed book, a great folio bible, between the years 1450 and 1455. The method of producing this book was kept secret. It was hoped that people would simply believe that the book had been put out in large numbers by the employment of a great many

* This preliminary study was inspired by the notable collection of medical classics exhibited by Dr. LeRoy Crummer at the University of California Medical School in February, 1929. Helpful stimulus has also been received from conversations with Dr. Sanford Larkey. It is hoped that their influence may maintain a lively interest in some of the more artistic aspects of medical publication among California physicians.